

# VX-410E/420E SERIES

VHF/UHF Portable Radios



- 5 WATTS POWER OUTPUT (SELECTABLE TO 1 WATT)
- 32 CHANNEL CAPABILITY (VX-410E/420E)
- 256 CHANNEL CAPABILITY (VX-420AE)
- 8-CHARACTER ALPHANUMERIC DISPLAY (VX-420E/420AE)
- MULTIMODE SCAN
- DUAL WATCH, PRIORITY, FOLLOW(ME)
- 5-TONE ENCODE/DECODE
- 2-TONE ENCODE (DUAL 2-TONE DEC)
- CTCSS / DCS ENCODE AND DECODE
- DTMF AND/TIME PAGING (REQUIRES OPTIONAL FVP-25)
- 2 PROGRAMMABLE FUNCTION BUTTONS (SIDE) ON BOTH VX-410E AND VX-420E
- 4 PROGRAMMABLE FRONT-PANEL FUNCTION BUTTONS (VX-420E/420AE)
- FRONT PANEL KEYPAD ILLUMINATION (VX-420E/420AE)
- 12.5/20/25 KHZ BANDWIDTH (PROGRAMMABLE BY CHANNEL)
- COMPANDER INCLUDED (AVAILABLE ON WIDE AND NARROW CHANNELS)
- VOICE ENCRYPTION BUILT IN SMARTBUNK™ OPERATION AVAILABLE
- VOICE STORAGE (OPTIONAL DVS-5 SYSTEM)
- ARTS™ (AUTO-RANGE TRANSPOND SYSTEM)
- BOLD, BTL0 AND TOT FUNCTIONS
- RX POWER SAVE CIRCUIT
- PC PROGRAMMABLE
- RADIO-TO-RADIO CLONING
- RUGGED CONSTRUCTION
- LOUD, CLEAR AUDIO OUTPUT
- NML-STD 810 DIE/IF
- COMPACT CASE SIZE, LIGHT WEIGHT

CE IP54

VX-410E Series

VX-420E/AE Series

**Vertex Standard**  
We make a difference

## Specifications

	VHF	UHF		
<b>General Specifications</b>	VX-41E/42AE	VX-42AE	VX-41TE/42TE	VX-427AE
Frequency Range	134-160 MHz (A) 146-174 MHz (C) 146-174 MHz (C)	134-160 MHz (A) 400-430 MHz (AS) 420-450 MHz (B) 440-470 MHz (CS)	400-430 MHz (AS) 420-450 MHz (B) 440-470 MHz (CS)	400-430 MHz (AS) 420-450 MHz (B) 440-470 MHz (CS)
Number of Channels	32 channel (16 channel 2 banks)	256 channel (group 2-16)	32 channel (16 channel 2 banks)	256 channel (group 2-16)
Channel Spacing		25,20/12.5-KHz		25,20/12.5-KHz
Battery Voltage		7.5 VDC		7.5 VDC
Battery Life		10hrs (w/100mAh) 10hrs (w/100mAh) 10hrs (w/100mAh) 10hrs (w/100mAh)		10hrs (w/100mAh) 10hrs (w/100mAh) 10hrs (w/100mAh) 10hrs (w/100mAh)
Temperature Range		-30°C to +60°C		-30°C to +60°C
Frequency Stability		±1.5 KHz		±1.5 KHz
Case size (W x H x D)		58 x 108.5 x 30 mm with FNB-83		58 x 108.5 x 30 mm with FNB-83
Weight (approx.)		300 g with FNB-V67L Antenna and Belt clip		300 g with FNB-V67L Antenna and Belt clip
<b>Receiver Specifications</b>				
Sensitivity		-4 dB $\mu$ V (EN) 20 dB SINAD		-3 dB $\mu$ V (EN) 20 dB SINAD
Adjacent Channel Selectivity		0.25 $\mu$ V (TA/EIA) 1.2 dB SINAD		0.25 $\mu$ V (TA/EIA) 1.2 dB SINAD
Intermodulation		70 dB / 70 dB / 80dB		65 dB
Spurious response rejection		70 dB		70 dB
Hum & Noise		45 dB		45 dB
Audio output		500 mW @4 Ohm, 10% THD		500 mW @4 Ohm, 10% THD
<b>Transmitter Specifications</b>				
Power Output		5.0/1.0 W		5.0/1.0 W
Modulation Limiting (EM)		5.0 KHz at 25 KHz - 4.0 KHz at 20 KHz - 2.5 KHz at 12.5 KHz		5.0 KHz at 25 KHz - 4.0 KHz at 20 KHz - 2.5 KHz at 12.5 KHz
Type of Emission		16K0F3E / 14K0F3E / 11K0F3E (TA/EIA)		16K0F3E / 14K0F3E / 11K0F3E (TA/EIA)
Conducted Spurious Emissions		-36 dBm @ $\leq$ 1 GHz -30 dBm @ > 1 GHz		-36 dBm @ $\leq$ 1 GHz -30 dBm @ > 1 GHz
F.M. Noise		45 dB @ 45.0/40dB		45 dB @ 45.0/40dB
Modulation distortion @ 1kHz		3%		3%

Measurements per EN 300 086 standards unless noted above. Specifications are subject to change without notice or obligation.

## Applicable MIL-STD

Standard	MIL 810D	MIL 810E	MIL 810F
Low Pressure	500.2/Procedure I, II	500.3/Procedure I, II	500.4/Procedure I, II
High Temperature	501.2/Procedure I, II	501.3/Procedure I, II	501.4/Procedure I, II
Low Temperature	502.2/Procedure I	502.3/Procedure I, II	502.4/Procedure I, II
Temperature Shock	505.2/Procedure I	505.3/Procedure I	505.4/Procedure I, II
Rain	506.2/Procedure I, II	506.3/Procedure I, II	506.4/Procedure I, III
Humidity	507.2/Procedure I, III	507.3/Procedure I, III	507.4/Procedure I
Salt Fog	508.2/Procedure I	508.3/Procedure I	509.4/Procedure I
Dust	510.2/Procedure I	510.3/Procedure I	510.4/Procedure I, III
Vibration	514.3/Procedure Cat. 10	514.4/Procedure Cat. 10	514.5/Procedure Cat. 10
Shock	516.3/Procedure I, IV	516.4/Procedure I, IV	516.5/Procedure I, IV

## Accessories & Options


\* 8. 14 120 W/C C for 200-240 W/C U for 230 W/C

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# VX-410E/420E SERIES

## VHF/UHF Portable Radios

The VX-410E/420E Series of 32-Channel and VX-420AE Series of 256-Channel VHF/UHF Portables features 5 Watts of Power Output and a host of leading-edge built-in features for demanding business/industry and public safety applications. Included as standard features are 5-Tone Encode/Decode, Dual 2-Tone Decode, 2-Tone Encode, Encryption, Voice Commander and Multi-mode Scanning. The VX-410E/420E/420AE may be programmed, by channel, for 12.5/20/25 KHz channel spacing and for simplex or split operation. The deluxe VX-420E/420AE version features an eight-character alphanumeric display, 4 additional programmable keys and illuminated keypad.

## HIGH PERFORMANCE

### 5 WATTS POWER OUTPUT

The VX-410E/420E/420AE Portables produce a full 5 Watts of power output, with an additional selection of 1 Watt available for increased battery life when higher power is not required.

### 12.5/20/25 KHz BANDWIDTH (PROGRAMMABLE BY CHANNEL)

When programming radios for use in different jurisdictions or geographical regions, the VX-410E/420E/420AE Portables may be programmed by channel for 12.5, 20, or 25 KHz channel spacing environments, with both bandwidth and deviation automatically set according to each channel's requirements.

### LEADING-EDGE DESIGN

Crafted with care for use in areas of severe RF pollution, the VX-410E/420E/420AE Portables include excellent adjacent-channel selectivity and immunity from Intermodulation, along with ETS-compliant 1.5 KHz frequency stability.

### LOUD 500 mw AUDIO OUTPUT

Ideal for reception in noisy environments, the VX-410E/420E/420AE Portables' high-powered audio is coupled to a large internal speaker, assuring solid copy throughout difficult crowd control, fire, or sporting-event operations.

### LONG-LIFE LITHIUM-ION BATTERY (1600 mAh)

The VX-410E/420E/420AE Portables may be equipped with advanced FNB-V67LL Lithium-Ion Battery Packs with 1600 mAh of capacity, for operating times of up to ten hours or more, even when using 5 Watts (5-5-90 duty cycle).

## VERSATILITY

### 32 CHANNEL OR 256 CHANNEL CAPACITY

The 32-channel capacity of the VX-410E/420E Portables includes quick access, and the channel-specific information loaded during programming minimizes the extra keystrokes required on competing models. Two banks of 16 channels each are provided for convenient channel access. The 256-Channel Capacity of the VX-420AE Series divides between 2 or 16 groups.

### PROGRAMMABLE "SOFT" KEYS

Two buttons on the side panel of the VX-410E may be custom-programmed for specific functions needed in your application. The VX-420E/420AE additionally provides four front-panel programmable keys, for a total of six available custom buttons.

### TRUNKING CAPABILITY

Installation of the SmartTrunk™ module enables use of the VX-410E/420E/420AE on systems equipped for the trunking operation.



VX-410E/420E



### DUAL 2-TONE AND 5/6-TONE SYSTEMS BUILT IN

For smooth integration into advanced radio systems, the VX-410E/420E Portables are equipped with 5/6-Tone Encode/Decode, as well as 2-Tone Encode/Decode, Dual 2-Tone Decode circuitry. In addition, DTMF ANI and DTMF Paging capability is also available through installation of the optional EYP-25 DTMF Pager Unit.

## EASY USER INTERFACE

### ADVANCED 8-CHARACTER ALPHANUMERIC DISPLAY

Providing an Alphanumeric Channel Label of up to 8 characters, the LCD display also provides convenient operating function icons to provide instant recognition of radio status.

### ERGONOMIC CONSTRUCTION

The carefully-engineered case construction features a gently rounded shape for a solid grip, whether the radio is wet or dry. Its over-sized keys are easy to activate, and the operating firmware has been carefully shaped by years of feedback from public safety, business, industry, and government users.

### KEY LOCK

A "Soft" key may be programmed as a "Key Lock" control, to prevent inadvertent channel change or unwanted activation/deactivation of functions. This is especially valuable in surveillance operations, where the radio may be concealed and subject to accidental pressure on its keys.

### RADIO TO RADIO CLONE FEATURE

For quick programming of the VX-410E/420E/420AE radios for an emergency task force, the Clone feature allows copying of all channel and configuration data from one VX-410E/420E/420AE to another same radio, using the optional CT-27 Cloning Cable.

## SECURITY

### BUILT-IN ENCRYPTION

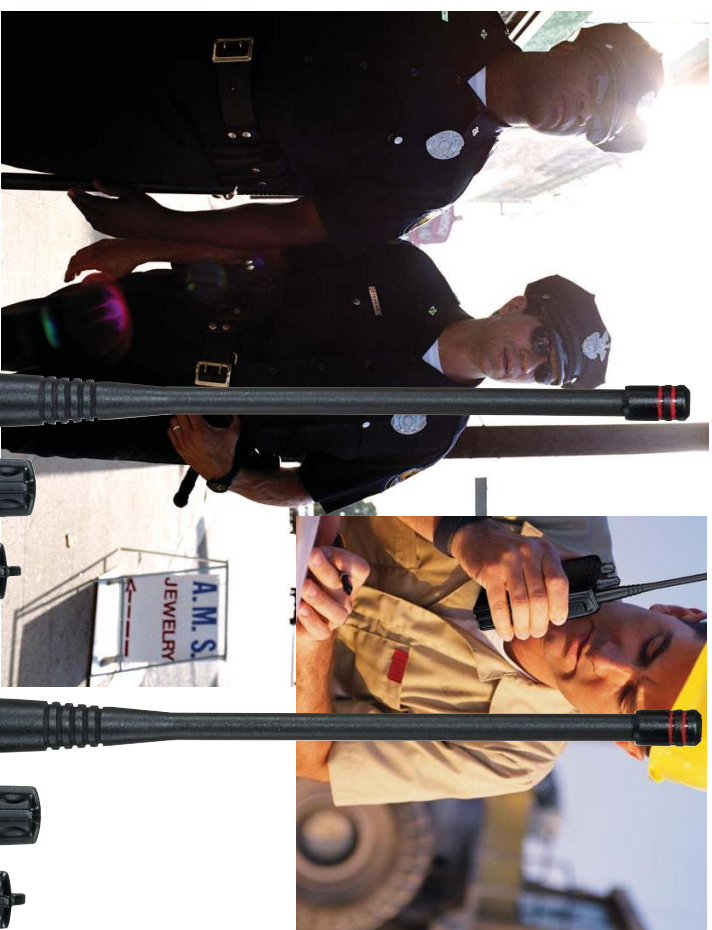
The built-in Encryption circuit provides security for your important public safety and private security communications, and it may be enabled at the time of radio programming by the dealer.

### OPTIONAL VOICE RECORDER

The optional DV-S5 Voice Recorder Unit allows you to record and store up to 120 seconds of incoming receiver audio, ideal for keeping an audible record of an important message. Audio may be saved either as a one-time 2-minute recording or a constantly refreshing "last 120 seconds" recording may be made.

### SECURITY PASSWORD FEATURE (VX-420E/420AE Series)

The VX-420E/420AE Series provides a security password feature which can minimize the chance that your transceiver could be used by an unauthorized party. When the password feature is activated, the radio will ask for the four digit password to be entered when the radio is first turned on. You must enter the password from the keypad.



## DURABLE CONSTRUCTION

### ULTRA COMPACT

The VX-410E/420E/420AE Series Portables features and performance are housed in an ultra-rugged, compact case measuring only 58 (W) x 108.5 (H) x 30 (D) mm, and weighing about 300 g with FNB-V67LL Lithium Battery.

### MIL-STD RATED

Designed for use under the most demanding conditions, the VX-410E/420E/420AE Portables are built in compliance with MIL-STD 810 D/EF/ specifications for reliable operation in environments including shock, vibration, high and low temperature, low pressure, rain, humidity, salt fog, and dust.



VX-410E Series

ACTUAL SIZE VX-420E/420AE Series

SmartTrunk™ Logo Based on available by SmartTrunk System Inc.